

BRUSH FIRE PREVIEW MATERIAL

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Bulletin No. 02-23

TO: All Uniformed Members

FROM: J. W. Callahan, Deputy Chief, Operations

SUBJECT: **RECALL PROCEDURE AND TWO-SHIFT ALTERNATING WORK SCHEDULE**

Events over the past year have caused the Department to review its capabilities and methods used to respond to unconventional and significant events. The Department's recall system has been modified in response to this review process.

The new recall system is designed to coordinate the assignment of recalled members to designated resources at fire stations and at Division Recall Base Areas (DRBA), which will ensure that members are accounted for. The system is flexible to allow the incremental recall of increasing numbers of members up to a Department-wide recall, based on the severity of the event. It is designed to function in the absence of the administrative Battalion or Division Commanders, if they are deployed and not available to coordinate a recall. The system will also have the capacity to operate for an extended period of time.

This Department Bulletin contains sections on:

- a) Member's recall responsibilities
- b) Fire station officer's responsibilities
- c) Two-Shift Alternating Work Schedule
- d) Division Recall Base Area operations

The Two-Shift Alternating Work Schedule provides the capability to augment Department staffing for an extended period. Department staffing can be increased daily by 50% for the duration of an event by placing all members on one of two alternating 24-hour shifts.

Recall is a relatively infrequent event that, when needed, must be carried out correctly. Therefore, recall procedures and instructions for recalled members and the staff that must initiate and manage it have been incorporated into a Recall Instruction card, worksheets, and packets.

Recall procedure packets have been developed for the Fire Chief, Deputy Department Commander (DDC), Recall Management Teams (RMT), Operations Control Dispatch (OCD), Public Service Officer (PSO), and fire companies which may be used to initially set-up the DRBA's.

The Fire Chief or DDC will initiate a recall by completing two worksheets and forwarding them to the RMT, or OCD, if the RMT is not yet operational.

The RMT or OCD will complete the Recall Media Announcement and Recall Phone Message worksheets and give them to the PSO. They will also complete the Recall Teletype worksheet and send it immediately to all work locations.

The worksheets and Recall Instruction Card all cover the same material which includes, the type of recall, who is being recalled, where recalled members are to report, and what to do when they arrive at the reporting location.

The new system guides members from recall notification to their assignment on a resource.

Recall instructions are provided to members through this Department Bulletin and the "quick reference" wallet-size Recall Instruction Card. The cards will be distributed in the near future.

Members shall call the Recall Phone Message at (213) 485-2337, or remember 485-"BEEP", when a recall announcement is broadcast. The message will provide specific recall information as described above. Members can note this information on their Recall Instruction Card.

Recalled members will receive further instructions at their reporting location. The Recall Teletype sent to all fire stations and work locations will instruct officers on how to process recalled members. An RMT will coordinate assigning recalled members to resources or to tasks at the DRBA's.

Operations Control Dispatch will initially dispatch a fire company to set up and begin checking in recalled members at the DRBA's. The fire company will follow the procedures in the Recall Procedures Packet B – Fire Company - Division Recall Base Area.

Operations Control Dispatch will call in one or two RMT's to take over managing the DRBA's from the fire companies. They will use the Recall Procedures Packet C – RMT – Division Recall Base Area. The packet contains individual worksheets for each position necessary to process recalled members through the DRBA.

When companies are created at the DRBA's, the company officer will be issued a Recall Activated Company Packet that contains company activation instructions, an RF (Recall Form) 214 Unit Log, and an RF 221 Demobilization Checkout form. These forms will be forwarded to the Bureau of Emergency Services when the companies are deactivated.

RECALL PROCEDURES

Member's Responsibilities

A recall announcement will be made through the media. The information in this section is condensed in the Recall Instruction Card. Members shall adhere to the following recall responsibilities:

- 1 Call the Emergency Recall information phone number at (213) 485-2337 (485-"BEEP") when you hear a recall announcement. Have your Recall Instruction Card ready to take notes on recall information.

Do not call OCD for recall information.

- 2 Members will be told the type of recall and who is recalled:

TYPE OF RECALL	WHO IS BEING RECALLED
Department-Wide	a) "ALL MEMBERS REPORT IMMEDIATELY"
	b) "TWO-SHIFT ALTERNATING WORK SCHEDULE" (All members will be on one of two alternating 24-hour shifts.)
Limited	a) SPECIFIC PLATOON Example, " B Platoon "
	b) ONE-HALF OF A SPECIFIC PLATOON (odd- or even-numbered fire stations) Example, "B Platoon, odd-numbered fire stations"
Selected	a) SPECIFIC MEMBERS OR GROUPS, Example, USAR, IMT, Hazardous Materials, etc.

Chief Officers will receive specific recall instructions which will be different from the above.

All members who have not been recalled shall monitor media broadcasts for further recall information.

Recalled members will be directed where to report.

3

Accounting for each member is important for the member's safety and the Department's ability to deploy resources. Members shall only be assigned to a resource by an officer at a fire station or an RMT at the DRBA.

MEMBERS SHALL NOT SELF-ASSIGN THEMSELVES TO A RESOURCE OR TASK.

1. Bureau of Emergency Services members will normally be instructed to report to either their fire station or DRBA.

A. Fire Station/assignment

Recalled members:

- a. Shall report to their assigned fire station/assignment.
- b. Shall be assigned to a resource by an officer as instructed in the Recall Instructions Teletype.
- c. After reporting to their assignment, members may be directed by an officer to go to other fire stations within the battalion to staff specified resources if there are more members than needed at their fire station.
- d. Shall report to their DRBA for assignment if:
 - It is unsafe to report to their fire station/assignment.
 - An officer is not present or does not arrive within one hour of the first-arriving recalled members.
 - A Recall Instructions Teletype is not received at the fire station or other stations within one hour of the first-arriving recalled member.
 - An officer has not assigned them to a specified resource at their fire station or within their battalion within two hours of their arrival.

Members who are reporting to their DRBA and have gone to their fire station first shall:

- Bring their personnel protective equipment.
- Bring unstaffed rescue ambulances, plug buggies, or sedans that they are certified to drive. Chief Officer command vehicles will be left in quarters.
- Bring a list of any apparatus that were left at the fire station.
- Report to the Check-in Unit.

B. Division Recall Base Areas (DRBA):

Recalled members shall:

- a. Report to their designated DRBA.

DIVISION	DIVISION RECALL BASE AREA
Divisions 1 and 2	Frank Hotchkin Memorial Training Center
Division 3	FS 88

- b. Bring their personal protective equipment (PPE). If a member does not have their PPE's then pick them up from their fire station if it is safe to do so.
- c. Bring any unstaffed rescue ambulances, plug buggies, or sedans that they are certified to drive from their fire station if they go there before arriving at the DRBA. Chief Officer command vehicles will be left in quarters.

Also, bring a list of any apparatus that were left at the fire station. Only one list is needed from each fire station.

- d. Report to the Check-in Unit at the DRBA.
- Provide requested information.
 - Check in any apparatus that were brought to the DRBA.
 - Turn in the list of apparatus remaining at the fire station.
- e. Stand by in the Personnel Staging Area, ready to be deployed.

- C. Recalled Chief Officers shall report to their place of assignment and activate the reserve Chief Officer vehicle. They will check with other battalions and divisions offices if their vehicle is not available. They will report to their DRBA if they can not locate an available Chief Officer vehicle.
 - D. Members will be given directions in the Recall Phone Message if they are to report to a location other than their fire station or DRBA.
2. Bureau of Fire Prevention and Public Safety members shall report as follows:
- A. Members shall report to the closest DRBA when there is a Department-wide recall of all members.

	DIVISIONS 1 & 2	DIVISION 3
FPB	Frank Hotchkin Memorial Training Center	Fire Station 88

Exceptions:

- a) Members assigned to an IMT shall remain available for that function.
 - b) Members assigned to a pre-designated 200 Series engines during normal business hours shall remain ready to staff those resources.
- B. Members will be directed where to report if the recall is not Department-wide, e.g., DRBA, FHMTTC, City Hall East - 9th Floor, or other location.
3. Incident Management Teams (IMT)
- A. Recalled members who are given a specific reporting location shall report as directed.

- B. When there is a Department-wide recall of all members, IMT members who have not been given specific reporting locations shall report to FHMTTC.
 - a) The first-arriving IMT members at FHMTTC shall establish a check-in area in the lobby and obtain recalled IMT members' information, including their IMT number and position.
 - b) Designate an IMT member waiting area.
 - c) IMT's can be assembled with either regularly assigned team members or, if time is critical, members from different teams.
 - d) IMT Operation Chiefs shall report to Department Command when they have a complete team.

4. Selected recall for specific tasks or resources:

- A. Recalled members will be instructed where to report by their respective coordinators.

SELECTED RESOURCES	RECALL COORDINATED BY
Incident Management Teams	OCD/RMT
Fire Prevention Bureau	FPB
Hazardous Materials	Haz Mat Fire Stations
Urban Search and Rescue	USAR
Critical Incident Debriefing Teams	CISD Coordinator
Operations Control Dispatch Section	OCD
Tractor Company	Tractor Company/FS88
Supply and Maintenance	S&M
Other specific tasks or resources	Affected Group

- 5. When it is unsafe for members to report to their fire station, assignment, or DRBA as directed, or their reporting location is inaccessible due to a civil disturbance, earthquake, etc., recalled members shall:

Bureau of Emergency Services:

- Report to their Division DRBA if they cannot report to their fire station.
- Report to the other Division's DRBA if they cannot report to their Division's DRBA.

Bureau of Fire Prevention and Public Safety and IMT's:

- Report to either DRBA if they cannot report to their assigned location.

All members shall carry the Recall Instruction Card.

Front of Card

Back of Card

LAFD RECALL INSTRUCTION CARD (RF-1) Rev 8-02	
<p>1</p> <p>Call the Emergency Recall information phone number (213) 485-2337 (or remember 485-"BEEP") when you hear a media broadcast or other recall announcement. Do not call OCD for recall information.</p>	
<p>2</p> <p>Type of Recall – You will be told who reports:</p>	
Department-wide	<p>A) ALL MEMBERS IMMEDIATELY REPORT</p>
	<p>B) 2-SHIFT ALTERNATING WORK SCHEDULE (Write in the schedule from the recall phone message)</p> <p>FIRST DAY, RECALL INITIATED _____ Date (1) _____ Platoon on duty, _____ Platoon ODD # FS recalled</p> <p>2ND DAY, AFTER RECALL INITIATED _____ Date (2) _____ Platoon on duty, _____ Platoon EVEN #FS recalled</p> <p>FOLLOWING DAYS – ALTERNATING SHIFTS (1) and (2) will continue to alternate 24-hour shifts, 1, 2, 1, 2, etc., until canceled.</p>
	<p>C) SPECIFIC PLATOON, _____ Platoon (Example "A Platoon".)</p>
Limited	<p>D) ONE-HALF OF A PLATOON, _____ Platoon, _____ ODD or EVEN #FS. (example "B Platoon, odd-numbered fire stations")</p>
<p>E) SELECTED MEMBERS/GROUPS Who: _____</p>	
<p>Chief Officers will receive recall instructions that are different.</p> <p>Monitor Media Broadcast - All members who have not been recalled shall monitor media broadcasts for further info.</p>	

<p>3</p>						
<p>Recall reporting locations, unless otherwise directed:</p> <p>A. Bureau of Emergency Svcs. - You will be directed to either:</p> <p>a) Report to your fire station.</p> <p>If it is unsafe to report to your station, or a Recall Instruction Teletype is not received within 1 hour of your arrival at your station or other stations, or an officer is not at your station within 1 hr of your arrival; report to your DRBA.</p> <p>b) Report to your Division Recall Base Areas (DRBA)</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>DIVISION</th> <th>DIVISION RECALL BASE AREA</th> </tr> </thead> <tbody> <tr> <td>Div 1 & 2</td> <td>Frank Hotchkin Memorial Training Center</td> </tr> <tr> <td>Div 3</td> <td>Fire Station 88</td> </tr> </tbody> </table> <p>c) Chief Officers shall report to their place of assignment and activate the reserve Chief Officer vehicle. Check with other battalions and divisions if it is not available. Report to your DRBA if a vehicle cannot be acquired.</p> <p>B. Bureau of Fire Prevention (FPB):</p> <p>a) Report to closest DRBA during a Dept-wide recall.</p> <p>b) Report as directed, if not Dept-wide recall</p> <p>c) IMT members shall remain available for that function.</p> <p>d) Members assigned to 200 Series engines during normal business hours shall remain available for those resources</p> <p>C. IMT:</p> <p>a) If assigned, report as directed.</p> <p>b) If unassigned, report to FHMTTC during a Dept-wide recall.</p> <p>D. When it is unsafe to report to their fire station/assignment/ DRBA or it is inaccessible, members shall report to:</p> <p>Bureau of Emergency Svcs:</p> <p>a) Their DRBA if they cannot report to their station.</p> <p>b) Other Division's DRBA if they cannot report to their DRBA.</p> <p>Fire Prevention Bureau: Any DRBA if they cannot report to their assigned location.</p> <p>When reporting to the Division Recall Base Area:</p> <p>A. Bring the following if you went to your fire station first:</p> <p>a. Your personal protective equipment.</p> <p>b. Unstaffed RA's, plug buggies, & sedans (No command veh's).</p> <p>B. Report to the Recall Check-in Unit.</p> <p>C. Turn in the list of apparatus left at the fire station.</p> <p>D. Stand by in the personnel waiting area to be assigned.</p>	DIVISION	DIVISION RECALL BASE AREA	Div 1 & 2	Frank Hotchkin Memorial Training Center	Div 3	Fire Station 88
DIVISION	DIVISION RECALL BASE AREA					
Div 1 & 2	Frank Hotchkin Memorial Training Center					
Div 3	Fire Station 88					
<p>Accounting for each member is important. Members shall only</p>						

RECALL PROCEDURES

Fire Station Officer's Responsibilities

INSTRUCTIONS:

On-duty or recalled officers shall use the following procedures when recalled members are directed to report to their fire station/assignment.

1. Staff the specified type of resources as directed in the Recall Instruction Teletype with the normal staffing complement shown in the following table.

DO NOT staff resources with more members than directed to.

SPECIFIED RESOURCES AND STAFFING	NORMAL STAFFING COMPLEMENT
200 Series engines	4
Front-line trucks (left unstaffed due to splitting companies)	5
Reserve rescue ambulances	2
Reserve engines	4
Brush Patrols	2
Add 5 th member to engine	5
Add 6 th member to truck/light force	6
Add 7 th member to truck/light force	7
Add 3 rd member to RA's	3

- a) Bureau of Fire Prevention and Public Safety (BFP&PS) members will be sent to fire stations to staff 200 Series engines during normal business hours. Officers should avoid placing these members on apparatus that may be assigned to an extended deployment, e.g., strike team leaving the City, etc.
- b) Assign members to the apparatus by appropriate rank. Use a qualified/certified member if a member with the proper rank is not present.
- c) Ensure that the name of each member assigned to a resource is affixed in the Captain's area of the cab for member accountability.

- d) Contact other fire stations within the battalion if additional members are needed to staff specified resources.
- e) Record each member's name in the fire station journal (F-2) who is assigned to a resource. Include the member's regular assignment and radio numbers if available.
- f) Contact the Administrative Battalion Commander for logistical needs if they are available within the battalion. Radios will not be available for all members.
- g) Notify OCD of fully staffed 200 Series engines and brush patrols. Also inform OCD if a radio is being used for a different resource and/or a position than it is normally assigned to.
- h) Inform the Administrative Battalion Commander of resources staffed by recalled members if they can be readily contacted.
- i) The Captain or acting Captain of a resource staffed with recalled members, shall maintain a record of all resource activities.

2. After staffing specified apparatus at the fire station:

- a) If there are more members than needed to staff the specified apparatus, or if there are no specified apparatus at the station, officers shall:
 - First, immediately contact other stations within the battalion and send them additional recalled members if they are needed to staff specified apparatus.
 - Second, all remaining members shall be directed to immediately report to their DRBA for assignment. Record their names in the fire station journal.
- b) Have the extra members take their PPE's and drive any unstaffed rescue ambulances, plug buggies, or sedans that they are certified to drive to the DRBA.
- c) If no one will remain at the fire station, secure the quarters and leave instructions for recalled members who arrive later to report to the DRBA.

3.If a Recall Instruction Teletype is not received:

If a Recall Instruction Teletype is not received at the fire station within one hour of the first-arriving recalled member, check with other fire stations to determine if they received one. If the Teletype was not received at any of the other fire stations, proceed to the DRBA and adhere to the instructions in Item 2b and c, above.

4. Accounting for each member is important. Members shall only be assigned to a specified resource by an officer at a fire station or an RMT at the DRBA according to the procedures within this Department Bulletin. Officers shall ensure that members do not self-assign themselves to resources or a task. Unassigned members reporting to an incident, area command, or other non-recall reporting location shall be directed to report to the closest DRBA.

RECALL PROCEDURES

Two-Shift Alternating Work Schedule

The Two-Shift Alternating Work Schedule will be used when significant events or operations will last for an extended period of time. This schedule places all field members on a 24-hour-on and 24-hour-off schedule and will increase daily field staffing by 50 percent. The schedule provides a maximum commitment of Fire Department field staffing for an extended period.

How the schedule works:

FIRST DAY - RECALL IS INITIATED

- 1) The on-duty platoon will remain on duty and complete the shift.
- 2) The members assigned to ODD-numbered fire stations of the platoon not working the next day shall be recalled.
- 3) Both platoons shall complete the shift and commence to work alternating 24-hour shifts together.

Example: Recall is initiated on a Tuesday.

“C” Platoon is on duty; stays on duty to end of shift.

“A” Platoon, ODD-numbered fire station members are recalled.

("A" Platoon is not working the next day),

Both platoons shall complete the shift and then return to duty on Thursday, Saturday, Monday, and continue this alternating 24-hour shift schedule together until it is cancelled.

SECOND DAY - AFTER RECALL IS INITIATED

- 1) The platoon scheduled to work shall report for their normal scheduled shift.
- 2) The EVEN-numbered fire stations of the platoon that was recalled the first day shall be recalled.
- 3) Both platoons shall work the shift and then commence to work alternating 24-hours shifts together.

Example: The day after recall was initiated is a Wednesday.

"B" Platoon scheduled for duty and works regular shift.

"A" Platoon, EVEN-numbered fire stations are recalled.

Both platoons shall complete the shift and then return to duty on Friday, Sunday, Tuesday, and continue this alternating shift schedule together until it is cancelled.

EXAMPLE - 5 DAY PERIOD SHOWING THE 2-SHIFT ALTERNATING SCHEDULE

Regular Platoon Schedule (shaded)				
April 12	April 13	April 14	April 15	April 16
C	B	C	A	C
Tuesday	Wednesday Saturday	Thursday	Friday	
FIRST DAY RECALL INITIATED C Shift and A Shift (ODD)	SECOND DAY AFTER INITIATED B Shift and A Shift (EVEN)	ALTERNATING FOLLOWING DAYS C Shift and A Shift (ODD)	ALTERNATING FOLLOWING DAYS B Shift and A Shift (EVEN)	ALTERNATING FOLLOWING DAYS C Shift and A Shift (ODD)

RECALL INSTRUCTION CARD

Each member shall carry a Recall Instruction Card and follow the instructions when a recall is announced. Members can use the Card to note information that they receive from the Recall Phone Message. The Two-Shift Alternating Work Schedule information can be entered on the Card. The information is as follows:

First day, recall Initiated _____ (Date)

(1) ____ Platoon on duty ____ Platoon ODD-numbered FS recalled.

Second day, after recall initiated _____ (Date)

(2) ____ Platoon on duty ____ Platoon EVEN-numbered FS recalled.

Following Days

(1) and (2) will continue to alternate working 24-hour shifts.

RECALL PROCEDURES

Setting up the Division Recall Base Areas

Recalled members are only assigned to resources at fire stations or Division Recall Base Areas (DRBA) to ensure accounting of each member.

The activation of the pre-determined Division Recall Base Areas will be in two phases.

1. Initially, OCD will dispatch a fire company to each DRBA.

DIVISION	DIVISION RECALL BASE AREA
Divisions 1 and 2	Frank Hotchkin Memorial Training Center
Division 3	FS 88

The company will utilize its Division Recall Base Area packet which contains instructions and diagram, RF 212 Personnel Pool Inventory forms, and RF 218 Support Vehicle Summary forms to complete the following operations:

- Set-up the Division Recall Base Area.
- Set-up a Check-in Unit area.
- Record recalled members' information on the RF 212 Personnel Pool Inventory form.

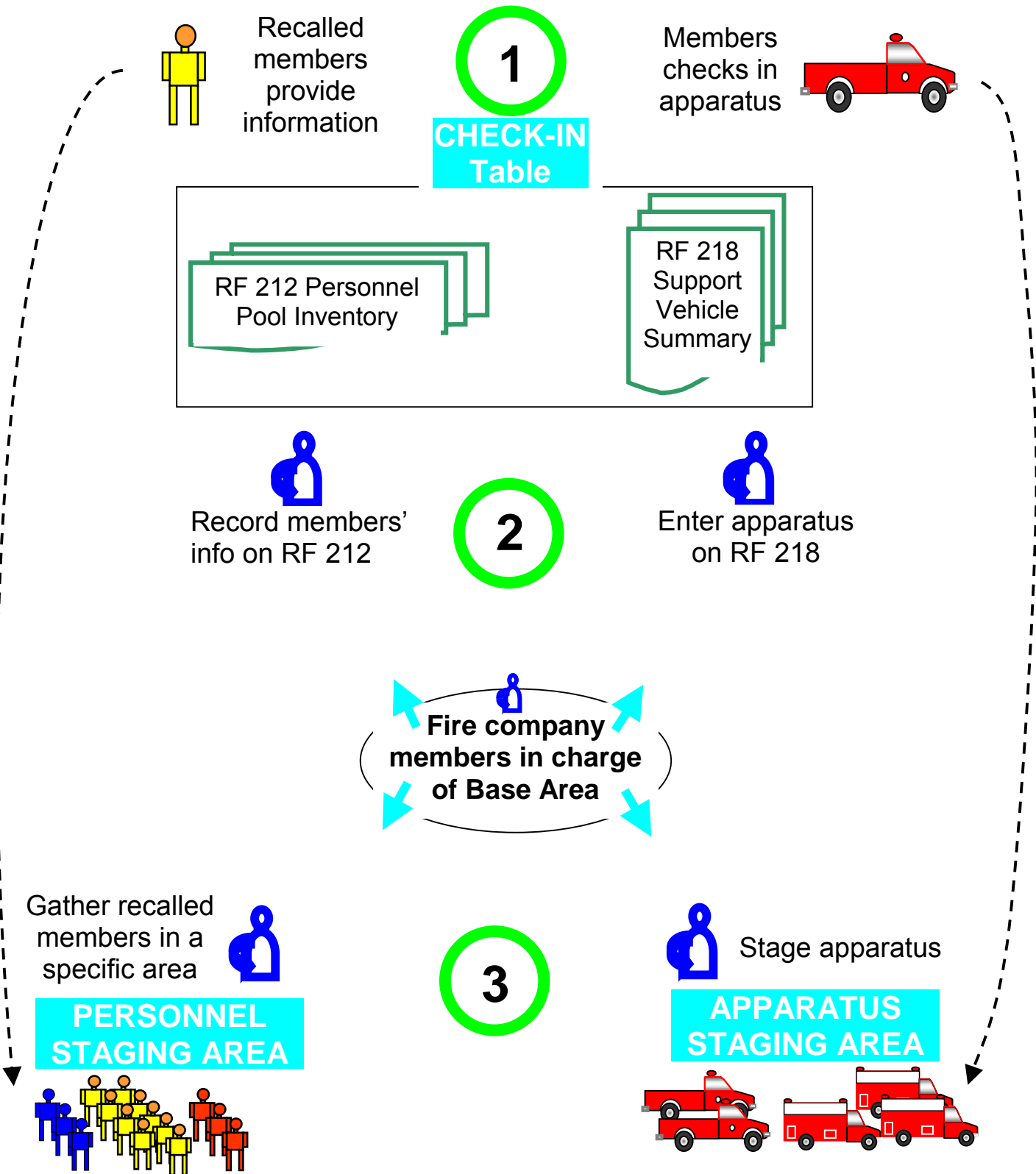
A separate RF 212 form will be used for each rank.

- Establish a Personnel Staging Area for recalled members to await an assignment.
 - Check in apparatus that the recalled members brought with them on the RF 218 Support Vehicle Summary forms.
 - Set up an Apparatus Staging Area for these Department vehicles and an area for members to park their personal vehicles.
2. One or two Incident Management Teams will be activated as Recall Management Teams (RMT) and take over from the fire companies at the DRBA's. The fire companies will continue to assist the RMT's.

The RMT's will coordinate and fill resource requests from Department Command using the recalled members at the DRBA's.

Fire Company

INITIAL SET UP PLAN - DIVISION RECALL BASE AREA



CONCLUSION

This modification of the recall procedures improves the recall system and provides a means to effectively utilize and account for recalled members in times of significant and sometimes overwhelming circumstances.

We are continuing to evaluate other operations and make enhancements to meet potentially new and larger-scale emergencies.

J. W. CALLAHAN, Deputy Chief
Commander of Operations

JWC:BES:EM:02-23

Bulletin No. 03-15

June 20, 2003

TO: All Members
FROM: R. D. Neamy, Deputy Chief, Operations
SUBJECT: **FIRE-DANGER RATING - THE BURNING INDEX (BI)**

On July 9, 2001, a tragic wildland fire "Thirty-Mile" occurred in Okanogan-Wenatachee National Forrest in Washington State, which claimed the lives of four firefighters. The Thirty-Mile Fire Accident Prevention report contained 31 action items. Due to lessons learned from the "Thirty-Mile Fire," fire departments across the nation are in the process of updating their brush firefighting safety procedures. One of the recommendations from this tragic incident is to ensure that each and every firefighter who responds to a brush fire is provided with and given current fire weather and fire behavior analysis. In an effort to provide this accurate information, our Department has re-evaluated our current means of calculating fire-danger rating.

The Department's existing means of calculating the brush fire-danger rating allows for two fuel models. Model "T" is descriptive of light brush and sagebrush-type grass. Model "B" describes woody plants at least six-foot tall, which occupy two-thirds or more of a particular brush site. Model "B" is more indicative of the types of fuels found in the Santa Monica, Santa Susana, and San Gabriel Mountains. The fuels found in these regions are described by the United States Forest Service as Fuel Type "B", which is California "Chaparral."

In addition, our Department has referred to the fire-danger rating as the Brush Burning Index (BBI). Other agencies utilize the term Burning Index (BI) rather than the BBI. Since the BI is based upon flame lengths, our Department will also implement the BI terminology.

The Department will also utilize fire weather calculations from the percentile system to calculate the Department's 2003 BI. This percentile rating system is used to calculate the probability of occurrence. Other agencies within the Southern California region utilize this percentile rating system to augment their staffing on high-hazard days. Using the percentile system will help us better balance public safety along with fiscal responsibility as we pre-deploy our resources. Therefore, analysis of the data has recommended that we use percentiles from the 95th through 99th ratings. A reading using Fuel Model "B" at the 99% means this critical rating will occur one percent of the time (approximately four times during a calendar year) and a 95% reading means that these ratings will occur five percent of the time (approximately 18 times during a calendar year).

The BI will provide reliable weather and fire behavior information to personnel responding to brush fires during the 2003 fire season. This also means that the Department's already established pre-deployment of resources in the extreme, critical, and red flag fire-danger ratings can remain the same. The new fire-danger rating BI will be:

<i>BURNING INDEX</i>		
I.	Rating	Criteria
	Low	0 to 37
	Moderate	38 to 47
	High	48 to 110
	Very High	111 to 161
	Extreme	162 to 211
	Critical	212 and above

Along with utilizing fire weather information generated from proximate Remote Automated Weather Station (RAWS) sites will ensure that the fire weather data is relevant to the San Fernando Valley. In addition, the selection of the 95th through 99th percentiles also captures the best thresholds for pre-deployment of resources based on fire weather calculations. The aforementioned BI enables the Department to establish a solid threshold for ensuring our personnel receive accurate fire weather and burning information when they respond to a brush incident.

R. D. NEAMY, Deputy Chief
Commander of Operations

RDN:GES:EMSD:03-15

L.C.E.S.

LOOKOUTS – COMMUNICATIONS – ESCAPE ROUTES – SAFETY ZONES

"WE WORK AUTONOMOUSLY WITHIN AN ORGANIZATION"

All personnel need to insure L.C.E.S. is in place for themselves and for their assigned personnel.

Update information throughout the shift.

View L.C.E.S. as a **system**, interconnected and dependent on each other.

Although all personnel are responsible for L.C.E.S., Division and Group Supervisors are in **key positions** to implement and coordinate the "L.C.E.S. system".

LOOKOUTS

1. Have knowledge of fuels, weather, topography, and fire behavior.
2. Are **100%** dedicated, competent, and trusted individuals.
3. Observe from safe location(s) with a **100%** visual of all hazards and personnel.
4. Have **100%** communication with assigned units and know their locations and call signs.

COMMUNICATIONS

1. All personnel shall know the communications plan for the incident.
2. All supervisory personnel shall have direct communication with their subordinates, superiors, and adjacent resources at all times. Effective communications may include the use of radios, face-to-face, phones, visual signals, and mechanical devices.
3. All personnel shall demonstrate discipline when utilizing radios by communicating only when necessary through short, precise, and complete messages.

4. All personnel shall insure that communications is received and understood. Perform periodic radio checks as necessary.

ESCAPE ROUTES

1. Two escape routes (1 primary) shall be identified (flagged?) and accessible to personnel at all times while operating in a hazardous environment.
2. Escape routes shall be scouted (visually checked) and safe.
3. Escape routes shall be adequate for the slowest or farthest away person to reach a Safety Zone without injury (anticipate rate of spread).

SAFETY ZONES

1. Safety Zones are locations for personnel to find refuge from danger without the need of a fire shelter; they rang form marginal to super-safe.
2. Safety Zones shall be adequate in size and number for all personnel (like lifeboats).
3. Fireline intensity (**Fire Behavior**) and Safety Zone topographic location (**Geography**) will determine Safety Zone effectiveness.
4. The **only way** to safely accomplish tactical objectives within a hazardous environment is for all personnel to either operate out of a Safety Zone, or to have access to an escape route leading to a Safety Zone.

Brush Manual Breakdown

Glossary of ICS Terms – *Modified*

Action Plan - Any tactical plan for an organizational element activity developed in consequence of the Incident **Action Plan**

Base – That location at which the primary logistics functions are coordinated and administered. (Incident name or other designator will be added to the term “BASE”.)

The Incident Command Post may be co-located with the base. There is only one base per incident.

Branch- That organization level having **functional/geographic responsibility** for major segments of incident operations. The Branch level is organizationally between Section and Division or Groups.

Camp- A geographical site, within the general incident area, separate from the base, equipped and staffed to provide food, water, and sanitary services to incident personnel.

Division- That organization level having responsibility for operations within a defined geographic area or with functional responsibility. The Division level is organizationally between the Strike Team and the Branch.

Group- A functional division (e. g. air support, salvage, structure protection, etc.)

Helibase- A location within the general incident area for parking, fueling, maintenance, and loading of helicopters.

Incident Action Plan- The Incident Action Plan, which is initially prepared at the first meeting, contains general control objectives reflecting the overall incident strategy, and specific action plans for the next operational period. When complete, the Incident Action Plans will have a number of attachments.

Operational Period- The period of time scheduled for execution of a given set of operation actions as specified in the Incident Action Plan

Section- That organization level having functional responsibility for primary segments of incident operations such as: Operations, Planning, Logistics, Finance. The Section level is organizationally between Branch and Incident Commander

Strike Team- Specific Combinations of the same kind and type of resources, with common communications and a leader.

Tactical Team- A group of resources with common communications and leader temporarily assembled for a specific mission.

Unit- That organization element having functional responsibility for specific incident planning, logistic, or finance activity.

I/C

- Manage Incident Operations
- Develop and implement strategic decisions
- Approves ordering and release of resources
- Directs and coordinated staff activities

ICS MULTI-AGENCY OPERATIONS OUTSIDE LOS ANGELES CITY

STRIKE TEAM LEADER/DIVISION SUPERVISORS

ICS OPERATIONAL PROCEDURES

DISPATCH

Los Angeles City Strike Team - **One B/C** and **five engines**.

Designation - **LFD Strike Team 1001 A**

LFD - 3 Letter Agency Designation

1001 - Los Angeles City Assigned Numbers **1000 – 1074**

formed by O.C.D. = 1000-1030, by IC 1031-1074

A - **Type One** Engine Companies

A Strike Team may be made up of a combination of resources from **Area "A"** – Los Angeles City is the **Coordinator for Area "A"**.

Santa Monica

Culver City

Beverly Hills

Designation for Area "A" Strike Teams

- **XLA Strike Team 1075 - A**

XLA- Area "A" 3 Letter Designation (**X for resources mixed**)

1075 - L.A. City Coordinated Assigned Numbers **1075-1099**

A - Type 1 Engine Company

Division Supervisor - May be dispatched outside the City with one or more Strike

Teams Responsibility - Agency Representative

If no **Division Supervisor** is dispatched with Los Angeles City Resources, Strike Team leader will assume **Agency Representative** basic responsibilities

LAFD OFFICER'S COMMAND RESPONSIBILITIES

The Los Angeles Fire Department officer in command will retain command of the Los Angeles Fire Department's apparatus and personnel. If a difference of opinion exist between an officer of an outside jurisdiction, particularly where safety of personnel is involved, the Los Angeles Fire Department officer will follow his/her own judgement and will inform his own commanding officer of the difference of opinion and be guided by his instructions.

Chapter 2 – Strategy and Tactics

Preplanning - Prior to the start of brush season all officers need to review their commands to assure that training has taken place in the following areas:

"B U S H"

***B**rush fire hose lays

***U**se of proper Firefighting Protective Clothing and Equipment

***S**tandard Wildland Firefighting Safety Rules

***H**elicopter Support

Officers whose district contain grass and brush areas should review their districts regarding the following:

“CHRIS”

C – Condition of Roads, Communication problem areas, Command post Locations and Canyon Areas
H – Helispot Locations
R - Roads Mountain area
I - Inventories, Brush
S - Staging Locations

LAFD first alarm brush response is based on a “hit it hard and fast” concept. According to the brush manual you could expect 4 Engines, 1 Task Force 2 Helicopters (at least one with water dropping capability), and two Chief Officers. *****I Called O.C.D. on 7-14-99 and was told you would get 3 Engines, 2 Task Forces, 2 Chief Officers and 1 Helicopter***** Additionally on High hazard days companies will be predeployed.

Size Up – YOU ARE THE IC, TAKE COMMAND!

“LAT-WA-SHEALD”

L - Location (Map Page Numbers and cadastral)
A – Area (Size: Football field = Approx. 1 acre)
T – Travel, Terrain
W – Wind & Weather
A - Accessibility
S - Staging
H - Helispot
E - Exposure
A - Additional Resources
L - Life Hazard
D - Determine Location of Command Post.

Considerations

Where the Fire is Currently, Where it is going, and where it will be in the next hour?

Announce Loom up enroute and note size, shape, color and angle of the smoke column, as it tells you wind direction and air stability, and hints at what is burning

Strategy

- Place company under acting Captain
- Assign them the most urgent task
- Determine whether to make Direct Attack or Indirect Attack or combination.

Direct Attack

- Primary method used by LAFD
 - Starts at point on the perimeter of fire along one or both flanks, working toward the head.
 - Scratch Line – Working rapidly along the flanks, making a control line just wide enough to established control and coldtrail later.
- Advantages- *Safe Area for escape (Burn Area)
*Keep fire small
- Disadvantages- *Larger fire line
*More overhaul
*Working directly in heat and smoke

Indirect Attack

- Select a defensive place where terrain is favorable for fire control
 - All terrain in between is conceded.
 - **Do not use in heavy fuel, high winds or to stop the fire head**
- Advantages- *Work in relative comfort and favorable terrain.
- Disadvantages *Working in unburned brush, rough Terrain, **Safety is Paramount**

TACTICS

- Most small fires we will employ a direct attack
 - Most large fire a combination of both indirect and direct
- “Structure Protection is our prime consideration under any conditions with the exception of **SAFETY**.”*
- The most common action for 1st engine is to **ATTACK THE HOT FLANK**
As with structure firefighting, your initial point of attack should be fire to prevent loss of life.

“R E C E O”

Rescue (prevent loss of life)
Exposure protection (prevent further extension of fire)
Confine fire to area of origin
Extinguish it completely
Overhaul or coldtrail
Examples:

Fire is spotting across the road, What might your first action be?

A) Attack body of fire

B) Attack spot fires on other side of road

Option B would keep your fire to one side of the road.

Fire is extending into structure or heavier brush?

A) Protect exposures

B) Attack the Hot flank.

“Always assign the most urgently needed task first”

FORMULATING A CONTROL PLAN

- Direct vs. Indirect
- Draw outline on map of incident (Take out of mapbook)
- Mark company locations on map as well as your position.

Deploying Equipment and apparatus

- Do not block streets
- Consider backing in for rapid egress
- Remain mobile (Lose mobility, Lose effectiveness)
- Stay out of saddles
- Stay out of draws
- Stay out of area above dense fuels
If you are about to be overrun by fire maximize use of your apparatus.
- Keep engine running
- Get inside closed cabs
- Use preconnected lines and B/A's for personnel protection

STRUCTURE PROTECTION

- Based upon hit & run, fast moving operation
- Must triage (Savable vs. Sacrificed)
- Place companies ahead of fire(where fire is going not where fire is)

“Minimum action taken by your company assigned to exposure protection should include”:

“I C STEPS”

- Intensity (Field)
- Construction type
- Surveying Area (prepare structure for advancing fire)
- Topographical factors
- Equipment
- Priority of Protection
- Staffing

When it's time for action, **Remember – “Running LAP”**

- **Running** – Leave Engine
- **L**ay out enough hose to cover structure. Including the roof.
- **A**pparatus – Park in safe location
- **P**rotection line – lay out

Don't Lose Your Mobility – “Hit It Hard And Fast”

Actions to protect structures

- Close all doors, windows, drapes, curtains and blinds and don't forget garage door.
- Connect garden hose

- Ladders to roof on side away from fire
- Roll up auto windows. Put car in garage heading out
- LEAVE LIGHTS ON IN STRUCTURE
- Remove combustible objects, garden furniture and pads in garage or house.
- Instruct physically able homeowners who choose to stay to follow above suggestions.

“REMEMBER, THERE IS NO VALUE IN WETTING DOWN BRUSH, TREES AND FIRE RESISTIVE ROOFS AHEAD OF THE FIRE.”

WATER USAGE

- Wetting down ahead of fire is no use
- Long Supply lines restrict mobility
- Remove fittings from lines left in place
- Use older less G.P.M. nozzles
- Consider Water Relay or Water Shuttle
- Verify if possible hydrants outside of City for outlet size and pressure.

REQUESTING RESOURCES

- Ask for a specific number of the closest engine companies and not strike teams to expedite response.
- Have requested resources respond to staging
(If you ask for strike teams this will delay response, the I/C can form S/T's @ scene.)

Chapter 3 – Basic Operations

Scratch Line

- Unfinished preliminary control line to check spread of fire.
- Established to control the perimeter
- An aid in quick control of the fire and must be coldtrailed as soon as possible.

Control Line

- Fire break wide enough for permanent control of fire
- Generally constructed with tractors and tools.

Patrolling

Must Be Established And Maintained Until Fire Is “DEAD OUT”

METHODS OF EXTENDING LINES

HOSE ROLLS

Preferred for steep terrain or Heavy brush

BUCKET BRIGADE

Members placed along entire existing line, using bucket brigade method to pass hose and or equipment to the end of the line.

Benefit- Scratch line is constantly patrolled.

WET LINE/DRY LINE

2nd dry line is pulled parallel to wet line. It is pulled to nozzle and extended.

May be broken into lengths as desired and added at nozzle.

Dry sections of hose are dragged along parallel to wet and extended until used up

CONTINUOUS LINE

Additional sections added @ apparatus ***Use caution assure enough slack is allowed to break line @ apparatus.

HELICOPTERS

750 LBS Capacity

1 Sect of 3 1/2 weighs 58lbs

1 Sect of 2 1/2 weighs 38lbs

Position apparatus so that hose bed is facing direction where hose will be placed.

Disconnect 4-way valves and other fittings.

WATER SHUTTLE ASSEMBLY

Allows one apparatus to discontinue pumping water and a second to start pumping without interruption of water supply to the working line.

EQUIPMENT NEEDED:

2-1/2" GATED WYE

2-1/2" DOUBLE MALE

2-1/2" TO 1-1/2" GATED WYE

100' OF 1-1/2" OUT OF EACH TRANSVERSE HOSE BED

I/C determines need

Shuttle officer assigned by I/C

Place 2-1/2" or 3-1/2 x 2-1/2" gated wye on hydrant to expedite filling apparatus

LAFD STANDARD BASIC RELAY OPERATION

The Relay Officer must **know the pump capacity and hose sizes** of the companies assigned to him and possess a **working knowledge of hydraulics**.

The first-in company officer automatically becomes the relay officer.

Determine the distance from H₂O supply to incident

Request 1 triple for every tenth of a mile + one for the hydrant

with 3-1/2 " hose (A standard 600' hose bed will cover 528' ((1/10 mile)) with sufficient slack hose to make connections at each end).

Triples with 2-1/2" hose will be limited to 700 GPM capacity.

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Hydraulics

Lay lines "Caravan Style".

On flat terrain, all pumps will maintain **180 psi** using their **gate pressure gauge**.

Delivery to each succeeding pump in the line will be **900 GPM @ 10 psi**

If Shutdown is needed, address the pump at the hydrant only.

He will initiate a slow, smooth shutdown.

NEVER SHUT THE WATER OFF AT THE NOZZLE !

BACKFIRE OPERATIONS

Backfiring is a drastic measure that is to be employed only in extreme emergencies.

Approval must be obtained from the I/C

Only used as an extinguishment tool

Only attempted if all exposed structures are protected

Exception to above:

DIRECT LIFE THREATENING SITUATIONS!

COLDTRAILING

To often neglected.

Water alone is not sufficient, hand tools must be extensively used.

Width: between same height of the brush and twice height of the brush.

"REMEMBER, THERE IS NO VALUE IN WETTING DOWN BRUSH, TREES AND FIRE RESISTIVE ROOFS AHEAD OF FIRE."

WATER USAGE

Wetting down ahead of fire is no use

Long Supply lines restrict mobility

Remove fittings from lines left in place

Use older less G.P.M. nozzles

Consider Water Relay or Water Shuttle

Verify if possible hydrants outside of City for outlet size and pressure.

REQUESTING RESOURCES

Ask for a specific number of closest engine companies and not strike teams to expedite response.

Have requested resources respond to staging.

If you ask for strike teams this will delay response, I/C can form S/T @ scene.

CHAPTER 4 – SAFETY ISSUES

Cal-OSHA requires that all members involved in wildland firefighting operations have the following protective clothing and equipment:

- Helmet
- Goggles
- Brush Jacket
- Nomex work pants or wool trousers
- Gloves, suitable to the hazard encountered
- Safety boots
- Fire Shelter

LAFD policy additionally requires:

- Protective hood on your person

TEN STANDARD FIREFIGHTING ORDERS

Fight fire aggressively but provide safety first

Initiate all action based on current and expected fire behavior

Recognize current weather conditions and obtain forecasts

Ensure instructions are given and understood.

Obtain current information on fire status

Remain in communication with crew, your supervisor & adjoining forces

Determine safety zones and escapes routes

Establish lookouts in potentially hazardous situations

Retain control at all times

Stay alert, keep calm, think clearly, act decisively.

(Review 18 Shout and Watchout Situations)

TERRAIN AND SITUATION HAZARDS

- Slope above a fire- one of the most hazardous place to be.
- Spot fires are one of the most hazardous conditions facing the
- the wildland firefighter
- Saddles are extremely hazardous locations to operate, fire will boil over into the saddle area and spot below.
- Can burn with great rapidity back up the ridge because of the venturi type vacuum.
- Ridges are the logical place to stop and hold an upslope fire,
- but don't stand in front of the fire to do it.

CHAPTER 5 – THE FIRE ENVIRONMENT

The Wildland fire environment consists of three major components: **topography, fuels, and weather.**

Weather has been described as *the most variable* of the three.

- *Wind affects the intensity, direction and rate of spread of fires
- *Most severe wind caused by dry foehn winds (Santa Ana)

Temperature has direct impact on humidity and air movement, and pre-heating of fuels

- Stable air discourages vertical movement and decreases fire activity
- Unstable air encourages vertical movement of the air and increases fire Activity.

Topography is *the most constant* of the three major components

- Steepness of slope most important factor.
- **South and West** Slopes generally have greatest number of fires
- North slopes typically will have heavier fuels, higher fuel moisture, low fire spread and fewer fire starts.

FUELS are the part of the environment that *actually carries the fire*.

- Light fuels = Grasses and weeds
- Moderate fuels = Coastal sage scrub.
- Heavy fuels = Mixed Chaparral

Moisture Content *Is Generally Considered The Most Important Influence On The Flammability Of Fuels*

CHAPTER 7 – INTERAGENCY COORDINATION

FIRESCOPE

FIrefighting **RE**Sources of **C**alifornia **O**rganized for Potential **E**mergencies.
Deals with major problems related to mutual aid, incident management, communications and multi-agency coordination.

**Training Alert #13 - Fire Shelter Alert
Number 13 October 1999**

*The In-Service Training Section will issue Training Alerts as the need arises.
They are intended to be shared at line-up.*

FIRE SHELTER ALERT

Fire shelters were introduced to United States Forest Service firefighters during the 1970's. Since 1977, an estimated 1,000,000 fire shelters have been sold to wildland firefighting organizations throughout the United States. Of the million shelters, approximately 1,000 have been deployed and, of them, an estimated 500 were deployed in situations in which they were necessary to prevent serious injuries or death.

Recent technological advances in research related to fire shelter performance standards by the United States Forest Service has led to knowledge that when some fire shelters are exposed to *direct flame*, adhesive material used in the construction of the shelter may vaporize releasing flammable hydrocarbon vapors *inside* the shelter. If the vapors ignite, firefighters are endangered by the fire inside the shelter and by damage to the shelters reflective aluminum foil exterior. Firefighters have survived entrapments in shelters with some areas of delamination and missing foil. The Forest Service believes the conditions within the shelter will be better for survival than outside the shelter, but the damage resulting from direct flame contact seriously reduces the shelters ability to protect the firefighter.

The Forest Service is developing a strategic plan to review the technology and develop new shelters and supporting training materials. In the interim, ***shelters shall continue to be mandatory for all grass and brush incidents.***

- Recognize that this information confirms that fire shelters have their limitations. **It is not a guarantee of your safety. It is a last resort.**
- First and foremost, remember that all firefighting tactics must be selected to ensure firefighter safety at all times.
- Escape routes and safety zones must be known by all and must be continually reevaluated.
- If you must deploy a fire shelter, it is extremely important that you deploy in an area where flames will not contact the shelter (**avoid** chimneys, steep slopes, draws, etc.).
- If you must deploy a fire shelter, you must recognize the importance of deploying the shelter in as large and fuel-free an area as possible. Roads, areas cleared by dozers to mineral soil or black areas with no residual fuel are suggested as deployment sites.

All members are encouraged to review Book 99, Brush Fire Operations Manual, Section 4-12 - "Fire Shelters".

**THE BIG FIRE
WITH ANTICIPATED LARGE LOSS OF STRUCTURES
AND MULTIPLE CASUALTIES**

By: Battalion Chief R.C. Wilmot

ENROUTE

- Setup Helispot, designate helispot company (Mt. Lee, Beverly Park Dr. Lot 36 or 80, 109 South. Toyon)
- Pre plan Command Post and Staging Locations
- Anticipate fire behavior according to weather, Terrain, fuel, exposures etc.
- If multi-agency response make contact with agency responding to insure common CP location and ordering point (Does not have to be at point of origin)

SIZE-UP

- Co-Locate with other agency I.C. -ASAP
- Location, size, fuel, direction, rate of spread
- Exposures and life hazard ("**Report high potential for loss of structures and casualties**")
- Command post location
- Staging locations

REQUEST ADDITIONAL RESOURCES

- 8 Water dropping helicopters
- 2 Type I Helitankers more if available
- Super scoopers if available
- 4 air tankers
- 20 closest engines to North Staging
- 20 Closest engines to South Staging
- 3 B/C's to North Staging and 3 B/C's to South Staging and 3 B/C's to the CP
- 2 A/C and Department Staff to Command Post
- LAPD Command Officers to the Command Post and personnel for large scale evacuation to staging
- 8 crews
- 2 dozers
- 2 Command Post Companies
- 3 more tac channels
- Inform OCD that next request will be for 20 strike teams

NOTIFICATIONS

- Activate the EOC
- News media notification of recommended evacuation for ----- area.

INITIAL ACTIONS

- 2ND IN B/C assigned to division or branch to handle initial assignment
- Assign companies to North and South Staging; have them report to CP on command or additional channel. Insure that they keep accurate records,

have them form Strike Teams or Tactical Task Forces. I.C. Will issue designation beginning with **1031**

- Request closure of major streets ASAP (Emergency response)
- Assign Branches, North, South, air Ops, Law" Medical
- Order more resources (20 Strike Teams immediate need)
- Order more Chief Officers to Command Post
- Assign Divisions to Chief Officers
- Assign task forces and strike teams to Divisions
- Assign supervisors for line construction and assign crews and dozers
- Insure Command and General Staff positions are filled

SECONDARY ACTIONS

- Order more resources (Strike Teams, aircraft for air saturation, crews if needed, Rescues etc.)
- Insure Liaison Officer has assistant at Law Branch and evacuation group is operational
- Provide direction and move resources as needed to stay ahead of the incident.
- Leave 10% to 20% behind to hold area. Division Supervisors and Strike Team leaders to request reassignment ASAP
- Move Command Post if needed
- Place orders for planning, logistics and finance section needs

BRUSH OPERATIONS WITH HANDCREWS - CHIEF NEAMY

November 8, 1999

TO: All Chief Officers
Bureau of Emergency Services

FROM: R. D. Neamy, Commander
Bureau of Emergency Services

SUBJECT: BRUSH OPERATIONS WITH HANDCREWS

Many fire agencies employ hand crews in their fire suppression operations as they relate to wildland fires. Within the State of California we may encounter crews from the California Department of Forestry; National Park Service and various other Fire Departments and agencies, as our Department becomes involved in major wildland firefighting operations.

In the Los Angeles City Fire Department, we are most likely to come into contact with hand crews from the Los Angeles County Fire Department in our wildland firefighting operations in and around the City of Los Angeles.

The Los Angeles City Fire Department has worked hand in hand with Los Angeles County hand crews at numerous grass and wildland incidents within the City of Los Angeles. The Los Angeles County hand crews are an integral part of the initial attack organization, and provide valuable fire suppression support at City wildland incidents.

Chief Officers shall possess a thorough working knowledge of the contents of the attached handout. Copies of the new hand crew publication will be forwarded in the near future to replace the hand crew publication currently contained in Department Brush Manual (Book 99).

R. D. Neamy, Deputy Chief
Bureau of Emergency Services

LOS ANGELES FIRE DEPARTMENT BRUSH OPERATIONS WITH HAND CREWS

The Los Angeles Fire Department has worked hand in hand with the Los Angeles County Fire Department (LAC) hand crews at many brush and grass incidents within the City of Los Angeles. The LAC hand crews are an integral part of the initial attack organization, primarily concerned with perimeter control. Crews have also been utilized for structure protection and have been responsible for saving many structures, often without the benefit of engine company support. Successful crew operations result from a combination of supervision, training, experience and esprit de corps.

USE OF HAND CREWS - TACTICS AND STRATEGY OF HAND CREWS

Hand crews are a group of trained personnel in top physical condition, who develop an esprit'de'corps in the work that they do. Crew foremen receive over 350 hours of wildland fire training and each crewmember receives 80 hours of training, including live fire exercises, before they are assigned to a wildland incident. The primary use of hand crews is to construct a control line around the fire. Control lines generally range from 18 inches to 3 feet in width, and depending on conditions, may exceed 10 feet. LAC hand crews usually work directly on the fireline (direct attack) in steep and rugged terrain. Using an anchor point, hand crews can be assigned to both the hot and cold flank of an incident.

Hand crews carry various types of tools and are "tooled up" in various ways, depending upon the fuel type they are dealing with. In addition to direct attack on a fire, hand crews are also used to construct secondary indirect hand lines and to conduct back firing operations in conjunction with the overall fire attack plan. Hand crews place a high priority on constructing a line around a fire to keep it narrow (large wind driven fire), or to cut it off (topography fire). In the cold trail stage of a wildland fire, hand crews are used to improve scratch lines or control lines that engine company personnel have created during their direct attack on the fire. Working with engine company personnel, hand crews can also be deployed to sweep through the burn area to pick out "smokes" and hot spots within the burn to prevent a rekindle of the fire. With permission of the Incident Commander, firing out and back firing are tactics that may be employed by hand crews. All such actions between LAFD and LAC need to be coordinated.

SUPPORT OF HAND CREWS

When lines are constructed or under construction, hand crews will be supported by helicopter water drops and or engine company hose lines. The most common task when supporting a hand crew will be advancing a progressive hose lay behind a fire crew to secure the line which has been constructed. If fire conditions are severe enough, the hose lay may be advanced slightly ahead of the fire crew to knock down the intensity of the fire. When helicopters are

dropping water to support hand crews with perimeter control, every effort should be made by helicopter pilots to minimize "in ground effect" rotor wash. Rotor wash can adversely effect the fire behavior and cause spot fires outside of the control perimeter. Pilots should approach water-dropping operations with the safety of the ground personnel in mind. Flying uphill into the topography with slow airspeed may create a hazardous condition to the personnel on the fire ground.

It is the policy of the LAFD, that when requested, our agency will support the hand crews with hose lines around the complete perimeter of the fire whenever possible. When engine companies are supporting hand crews, and there is limited water supply (i.e. no supply line from hydrant) engine company personnel should be judicious in their use of water and concentrate on controlling the perimeter of the fire. Hot spots within the fire area can often be left to burn out or be extinguished later. The priority with a limited water supply should be placed on controlling and extinguishing the perimeter of the fire. There are currently two water tenders from L.A. City Recreation and Parks, available through OCD. When hand crews build or construct fireline (remove unburned vegetation from the burned area, outer edge, usually three feet wide in California), on steep slopes in an underslung configuration, hand crews may not have, two viable escape routes. Crew Supervisors and engine company commanders must be aware of this and be prepared to reduce the danger by insuring LCES is in place, requesting hose lines to assist and/or have aerial support in the unburned area. Another option is to postpone completing the task until the temperature decreases and humidity increases (time tagging). When working at brush/grass incidents with hand crews, a major role of LAFD personnel will be to support the crews with hose lines. Supervisors of LAFD companies and personnel must be aware of the position of the crews at all times, and be familiar with their operational plan. This is important, particularly at night, when control activities might dislodge rolling material that could injure personnel working below. Approval shall be obtained from the Incident Commander prior to the reassignment or release of any resources supporting hand crews. LAFD supervisors and personnel shall verify with a Crew Supervisor, Camp Superintendent, or Agency Representative prior to moving, or removing hose lines that are in place to support hand crews. If a hose line is removed, it shall be ascertained that the hand crew no longer needs the hose line. Premature removal of a hose line may create an unsafe condition for the hand crews.

When hand crews are working at LAFD incidents, Division Supervisors and Strike Team/Tactical Task Force Leaders shall be aware of the following:

- Suppression strategy and tactics employed by hand crew(s).
- Safety plan for hand crew(s).
- Location of escape routes.
- Communication Plan (radio channels, radio id's, etc)
- Identification of Crew Supervisors and Crews.

LCES - Lookouts, Communication, Escape Routes, Safety Zones

LAC policy is to have LCES in place anytime a hand crew is working on a wildland fire. LAFD members should confer with LAC personnel to determine how LCES has been provided. Simply stated, all members involved in the game need to be aware of the gameplan. All LAFD personnel shall work closely with hand crews incorporating a joint use of Lookouts, Communication, Escape Routes and Safety Zones for all personnel.

COMMUNICATIONS AND RADIO IDENTIFICATION

The Los Angeles County Fire Department utilizes County frequency "Blue 5" (Crew Net) direct for hand crew operations. LAFD Division Supervisors and Strike Team/Tactical Task Force Leaders shall verify what frequency the LAC hand crews are using when they are deployed at a City incident. Contact can be made through the L.A. County Agency Representative, Fire Crew Supervisor, Fire-Crew Superintendent or other responsible County member on mutual aid radios.

The LAFD 500MHz Radio is pre-programmed with the above frequency and may be used to monitor hand crew operations. Officers working with LAC hand crews shall carry this radio to monitor the hand crews situation. As this is a County tactical frequency, communication should only be initiated in the event of a high priority message or emergency situation. An example of an emergency message would be LAFD companies pulling out of the area due to a dramatic change in fire conditions, etc.

JOINT FIRE SUPPRESSION OPERATIONS-WITH HAND CREWS

In all City incidents, the LAFD Incident Commander will be in charge of all resources assigned to that incident. The Incident Commander will be in contact with Agency Representatives or Crew Supervisor(s) of other agencies assigned to and working at the City incident. The Incident Commander shall brief the Agency Representative(s) or their designated representative upon arrival of crew resources.

Listed below are suggested items for discussion between the Incident Commander and Agency Representative.

- Operational plans.
- Logistical and support needs.
- Incident specific tactics and strategy.
- Fire crew specific instructions/tasks.
- Feeding, crew rest, relief, etc.

Division Supervisors, Tactical Task Force/Strike Team Leaders and Crew Supervisors should handle operational issues that occur at their level.

The Incident Commander shall be notified anytime an operational issue cannot be resolved by the above personnel of the respective agencies.

LAC hand crews are available to respond to wildland or watershed fires within the City of Los Angeles. The Incident Commander shall request hand crews through OCD. The standard initial LAC brush response into an LAFD incident is 4 crews, 1 flycrew, 1 helicopter, 3 superintendents (Captains); the closest jurisdictional Battalion Chief and a Battalion Chief assigned to the LAC Camps. The superintendents may not arrive with the crews. The first superintendent will check in with the Incident Commander and then assume the role of "Crew Coordinator". After checking in, the Crew Coordinator may leave the Command Post to get the Crews working. The Battalion Chief assigned to the Camps will normally drive separately to the incident and relieve the jurisdictional Battalion Chief.

Presently there are 11 Fire Suppression Camps housing 39 hand crews. Of the various County Camps, three (3) are made up of paid personnel from the County Fire Department and the remainder are staffed by inmates from the California Department of Corrections (CDC) and State and County (Juvenile) Court System. The paid crewmembers are known as Fire Suppression Aides (FSA's). Inmate crews will be staffed by either juvenile males, adult male or female inmates.

CREW TYPES

3 Paid Camps 3 Crews

2 Probation Camps (Juvenile) 6 Crews

5 CDC Camps (Adult) 22 Crews

1 Sheriff Camp (Adult) 3 Crews

34 Type I s

Normal Crew strength Monday through Friday, 0800 to 1600 hours are 34 Crews.

Paid Crews

3 Paid Fire Camps. Each with 1 hand crew with staffing ranging from 10 to 14 personnel with a supervisor. LAC will not send a crew out with less than ten personnel. Staffed year around.

Camp 2 La Canada - Flintridge

1 Superintendent

3 Fire Crew Supervisors

1 Hand Crew

Copter standby location during fire season with an 8 person Fly Crew.

Camp 8 Malibu

1 Superintendent

3 Fire Crew Supervisors

1 Hand Crew

Camp 9 Santa Clarita
1 Superintendent
3 Fire Crew Supervisors
1 Hand Crew

Located atop the mountain splitting Pacoima and the Saugus area. Copter standby location during fire season with an 8 to 9 person Fire Crew.

Incarcerated Crews

Camp 12 - Sheriffs Camp Wayside Honor Ranch - Saugus
1 Superintendent
7 Fire Crew Supervisors
3 Hand Crews

Camp 15 - Juvenile Camp Big Tujunga
1 Superintendent
8 Fire Crew Supervisors
4 Hand Crews

Camp 17 La Verne
1 Superintendent
5 Fire Crew Supervisors
4 Hand Crews (2 Crews daily) *

*Only 2, Crews on Monday through Friday, 0800 to 1600. The remaining 2 are in High School and are available for immediate recall to in service status.

California Department of Corrections Crews

Camp 11 Acton
1 Superintendent
8 Fire Crew Supervisors
4 Hand Crews

Camp 13 Malibu (Female Inmates)
1 Superintendent
10 Fire Crew Supervisors
5 Hand Crews

Camp 14 Saugus
1 Superintendent
8 Fire Crew Supervisors
4 Hand Crews

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Camp 16 Palmdale

1 Superintendent

8 Fire Crew Supervisors

4 Hand Crews

Camp 19 Azusa

1 Superintendent

10 Fire Crew Supervisors

5 Hand Crews

LAC-policy is all C.D.C. Crews, Sheriff and Juvenile Crews are only to work on the fire line for 12 hours, then 12 hours off. However, with one exception, they will routinely use C.D.C. Crews in excess of 12 hours. The Juvenile Camps 15 and 17 can only work on the line for 12 hours and then they must return to Camp for 12 hours.

UNIFORM COLOR CODE

All orange shirt and pants is a C.D.C Crew or L.A. County Sheriff Crew.

Orange shirt and yellow pants is a Juvenile Crew.

All yellow shirt and pants is a Paid Crew.

Helmets have also been color-coded which will identify which Camp a crew is from.

L.A. COUNTY FIRE DEPARTMENT CAMP NUMBERING SYSTEM

The Camp number is first followed by the Crew number. i.e., Camp 15 which has 4 Crews: 15-1, 15-2, 15-3, 15-4 and Superintendent 15.

FLY CREWS

Fly crews consist of 7 to 8 personnel plus a supervisor. The fly crew will often be dropped off on a ridge laterally from the head of the fire and may work alone.

They generally work "direct attack", but will also work "indirect". Their line construction needs to be supported by hose line or aircraft, and coordinated with the overall fire attack plan.

BARRICADE FIRE GEL

www.BarricadeGel.com

Barricade Fire Gel, is a product fire suppression companies utilize on exterior surfaces of combustible materials. The main reason this product is utilized is due to inadequate defensible space between the fire and the threatened exposure. This product provides an insulating zone between the heat of a fire and the protected surface, which means the product provides a high level of protection from radiant heat, flying embers, and direct flame impingement.

This product clings to vertical surfaces, which makes it ideal for structure protection. The product also works on metal, glass, stucco, and wood. Barricade can also be applied to pressurized cylinders, automobiles, railroad cars, and vegetation.

Barricade is a liquid concentrate composed of superabsorbent polymers. When these polymers are mixed with water a protective gel is formed to increase the heat absorptive capability of the foam solution.

Barricade is non-toxic and environmental friendly. The product dissipates into the soil with no environmental hazard. The product may produce some staining on older combustible surfaces.

The manufacture recommends that the Barricade gel be removed in the following ways:

- If the product is placed on thick and there is large quantities of gel, then use a stiff bristle brush/broom to remove as much of the product as possible. The product can be disposed of in a trash receptacle.
- The preferred method is to then let the product dry and then brush it off.
- If allowing it to dry is not possible then remove it with copious amount of clean water.
- If the product has been exposed to extreme heat temperatures and is thoroughly dried out, then pressure washing may be necessary. However, remember that pressure washing has the potential to damage the surface of the exposed surfaces.

Safety consideration - If water is used to remove the product, then remember that the gel on the ground will be very slippery.

TRAINING BULLETIN #16 SYPHON EJECTORS 1"-1 1/2"

DESCRIPTION

These ejectors are "Penberthy" series 65-A (1") and 67-A (1 1/2"). Reference by size, i.e. 1" or 1 1/2", is with regard to the inlet hose dimension. Each ejector is equipped with hose thread adapters (N.S.T.) and a combination foot valve and strainer.

PURPOSE

This ejector will permit water to be picked up from streams, lakes, swimming pools, and other sources of water. This appliance may be utilized where the distance from, or the height above, the water source makes it impractical to draft with hard suction hoses.

PRINCIPLE OF OPERATION

The syphon ejector is actually a jet pump unit (see illustration).

NOTE: Illustration is a schematic representation, hose connection to the inlet is through a 180 degree return bend, thus allowing the inlet and discharge lines to lay parallel without kinks or bends.

INLET

Water under pressure enters the ejector through an inlet nozzle, 5/16" diameter on the 1", 1/2" diameter on the 1 1/2". The restriction provided by this nozzle converts the incoming fluid pressure into a high-velocity jet stream.

SUCTION

When water flow is started through the ejector, air in the suction chamber is entrained by the jet stream and emerges from the discharge, thus lowering the air pressure in the chamber. As pressure in the suction chamber is brought below atmospheric pressure, water is forced through the strainer into the suction.

DISCHARGE

Water from the suction is "picked up" by the high-velocity jet stream and acquires part of its energy. In the diffuser, the velocity of the water is converted to a pressure greater than the suction pressure but lower than the inlet "motivating" pressure.

FOOT VALVE

The foot valve prevents loss of water or back-flow through the suction. For example: Water will not be siphoned from the apparatus tank if pump is shut down and tank-to-pump valve left open; pump discharge will not go out through suction if the discharge line is restricted or closed.

OPERATION - SERIES 65-A 1 IN.

This ejector will supply one 1" spray tip.

To place in operation:

1. Spot apparatus as close to water source as possible.
2. Connect a 1" line between the apparatus discharge outlet and the syphon inlet; open the discharge valve.
3. Connect a 1 1/2" line between the syphon discharge and the apparatus suction inlet. If more than two sections of 1 1/2" hose are required, it may be necessary to utilize siamesed 1 1/2" or a 2 1/2" hose in order to get an adequate flow.
4. Place the ejector in the water source so the strainer is below the surface. Prevent it from resting on the bottom if mud or sand may be picked up.
5. Open the dump valve so the pump, line to ejector, ejector, and return line will fill with water. The foot valve will prevent escape of water. The dump valve may be closed after ejector is in operation.
6. If the water is to be utilized to refill the tank, open the fill valve, if equipped, or place discharge line into the tank; otherwise, lay a 1" discharge line to the fire or to another apparatus.
7. Place the pump in gear and increase the engine speed. The ejector is more efficient at the higher engine pressures.
8. To keep the pump from running away from the water, watch the compound gage, if equipped. Do not let the gage pressure drop below zero or the ejector will cease to operate. If there is no compound gage, feel the 1- 1/2 " line into pump inlet; do not allow it to collapse. To prevent cavitation, control the amount of water being discharged into the tank or out of the nozzle by partially closing the tank fill valve or discharge valve.

The friction loss in the return line will have an effect on the efficiency of the ejector the same as discharge head.

OPERATION - SERIES 67-A 1 1/2"

This ejector will supply three 1" spray tips at 75# n.p.

To place in operation:

1. Spot apparatus as close to water source as possible.
2. Connect a 1 1/2" line between the apparatus discharge outlet and
3. Connect a 2 1/2" line between the syphon discharge and the apparatus suction inlet. If more than two sections are required, it may be necessary to use a siamesed 2 1/2" to get adequate flow.
4. Place the ejector in the water source so the strainer is below the surface. Prevent it from resting on the bottom if mud or sand may be picked up.
5. Open the dump valve so the pump, line to ejector, ejector, and return line will fill with water. The foot valve will prevent escape of water. The dump valve may be closed after ejector is in operation.
6. If the water is to be utilized to refill the tank, open the fill valve, if equipped, or place discharge line into the tank; otherwise, lay needed discharge lines to the fire or to another apparatus.
7. Place the pump in gear and increase the engine speed. The ejector is more efficient at the higher engine pressures.
8. To keep the pump from running away from the water, watch the compound gage, if equipped. Do not let the gage pressure drop below zero or the ejector will cease to operate. If there is no compound gage, feel the 2 1/2" line into pump inlet; do not allow it to collapse. To prevent cavitation, control the amount of water being discharged into the tank or out of the nozzle by partially closing the tank fill valve or discharge valve.

The friction loss in the return line will have an effect on the efficiency of the ejector the same as discharge head.

Training Alert #1-02
Predeployed Companies at FS 88
Number 01-02 January, 2002

The In-Service Training Section will issue Training Alerts as the need arises. They are intended to be shared at line-up.

PRE-DEPLOYED COMPANIES
AT FIRE STATION 88

During high hazard days (BBI 81+), or as a result of major incidents, fire companies are pre-deployed and assembled as Strike Teams (ST) or Tactical Task Forces (TTF) at Fire Station 88. These staged resources not only increase the Departments response capability to adequately meet the resource needs for these types of incidents, they also have a significant impact on the daily operations of Fire Station 88.

The purpose of this Training Alert is to assist companies assigned for pre-deployment with deployment preparation, staging area, resource locations and actions expected within the pre-deployment staging area to minimize impact at Fire Station 88.

LOCATION AND ACCESS TO FIRE STATION 88

Fire Station 88 is located at 5101 N. Sepulveda Boulevard, Sherman Oaks. Cadastral Map Page 429, 51-34. Access to Fire Station 88 is gained via the rolling security gate on the south side of the station, during normal business hours the gate is open. After hours, or if the gate is closed, access is made by utilizing the lock box (1 C88 Key) located on the security wall on the south side of the gate. Trip the switch located inside the box to gain access. On departure, the gate will open automatically when apparatus approach within 3'-5' of the gate.

WHERE TO SPOT APPARATUS

Staged apparatus should be spotted as close to the dirt berm on the west side of the parking lot as possible, facing out (east). This parking lot is shared with the Valley Shops to park apparatus under repair, at times this may require further consideration when parking. Pre-deployed resources shall not block the access driveway to the helispot located on the west side of the dirt berm at any time.

MEETING AREA

After assembly of TTF or ST apparatus and personnel, the patio area located on the west side of Fire Station 88 should be used for command and company briefings. Adequate seating, table space for maps, protection from the elements

and lighting is available to support team briefings. This is the area where TTF/ST personnel should congregate while waiting for assignment, not in Fire Station 88. There is a pay phone in the briefing area as well as a soft drink machine for personal use. Department business phones are available in Fire Station 88's quarters. Restrooms are available on the south side of Fire Station 88. Diesel and gasoline pumps are located in the parking lot north of Fire Station 88 or in the front lot north west of quarters.

IMPACT ON FIRE STATION 88

Due to the amount of staffing assigned to ST and TTF, the impact on Fire Station 88 is considerable. To minimize the impact from ST/TTF pre-deployments, one member designated by the ST/TTF leader should be designated to liaison with Fire Station 88 to resolve any support issues. Members should not congregate in the Fire Station kitchen or office areas. At no time shall Fire Station 88 quarters be left un-secured.

APPARATUS REQUIREMENTS

Company officers should review Department Bulletin 01-16 with their respective commands for guidelines regarding Apparatus eligibility to be dispatched as a part of Strike Team assignments.

EQUIPMENT AND SUPPLIES

It is recommended that Company Officers review their Brush Inventory books and survey their commands to ensure they are appropriately prepared for pre-deployment and ST/TTF missions, possibly lasting up to several days. It is the responsibility of the Company Officer to ensure apparatus, personnel and supplies are prepared to meet the needs of the mission. Supplies are the responsibility of the home station, not the staging area location station.

Common items missed and not carried by pre-deployed companies.

- MRE's
- Extra Brush Hose Packs
- Ice Chest with ice
- Drinking water, Gatorade
- Brush Web Gear
- Members personal packs (Three day supply)
- Extra handi talkie batteries
- Personal medications, aspirin, etc.
- Snack foods
- Personal sanitation needs

*Doors opened by **ST/TTF** personnel shall be secured prior to the **ST/TTF** leaving quarters.*

**.Training Bulletin #83 Africanized Honeybees
AFRICANIZED HONEYBEES**

- I. INTRODUCTION
- II. CHARACTERISTICS AND BEHAVIOR
- III. PUBLIC HEALTH IMPACT
- IV. DEFINITIONS
- V. CONTROLLING MEASURES AND PERSONNEL SAFETY
- VI. SURPRISE ATTACKS
- VII. WILDLAND ENCOUNTERS
- VIII. BEE VEIL (HOOD)

II. INTRODUCTION

In 1956, African honeybee queens were imported into Brazil by researchers attempting to boost the productivity of the resident European honeybee. The intent was to cross the highly productive African honeybee with the common European variety to produce a hybrid bee that would possess the increased honey production of the African honeybee while maintaining the gentle characteristics of the European honeybee.

During the experiment, swarms of the bees accidentally escaped into the Brazilian countryside.

The swarms developed into feral (or wild colonies), and began to spread throughout South America. These hybrid bees were named Africanized Honeybees and have since migrated at a rate of 200 to 300 miles annually through Latin America and into the Southern United States. The bees thrive in warm tropical and semi-tropical climates similar to those found in Southern, and Central California. The California Department of Food and Agriculture is currently monitoring this migration.

III. CHARACTERISTICS AND BEHAVIOR

Field Identification of the Africanized honeybee is difficult, as these bees look very similar to the European honeybee in size, color, and overall appearance. The difference lies in the behavioral traits of the Africanized honeybee (AHB). Whereas the European honeybee is considered docile, the AHB is extremely aggressive with a great tenacity to protect its hive. These bees have the ability to detect the vibrations of a person or animal walking up to 100 feet away and will send out large numbers of bees to investigate / attack the disturbance. Once the first sting occurs, the bee releases an "attack pheromone" scent, which fills the air and signals to the hive that an attack has begun. Several hundred bees will join forces to repel the invader with an average defensive action of 85 stings per 30 seconds.

Unlike the European honeybee that will drive a man or animal as far as 400 yards before ceasing an attack, the AHB will chase an intruder up to a half-mile with the defensive action lasting 8 hours or more.

IV. PUBLIC HEALTH IMPACT

As the Africanized honeybees become colonized in Los Angeles County, we can anticipate an increase in multiple stinging incidents. This is especially true for the elderly, children, and any other person or animal unable to rapidly retreat from an attack. Additionally, people with an inherent allergic reaction to bee venom will be at greater risk (anaphylactic shock). The sting of an AHB is no more venomous than a common honeybee, but the increase in quantity of stings from an attack poses a potential health risk.

V. DEFINITIONS

1. Africanized Honey Bee (AHB): An aggressive species of bee, not visibly distinguishable from the common European honeybee.
2. Colony: A community of bees that is stationary (hive) with a small number of bees flying in close proximity to the hive.
3. Swarm: A cluster of bees that have left the hive.
4. Active Swarm: Numerous agitated bees flying wildly around, occupying a wide area.
5. Exclusion Zone: A minimum 300-foot area established around the insects. This area is subject to change according to swarm activity.
6. Safe Refuge Area: Inside structures, vehicles, or areas clear of the exclusion zone.
7. Anaphylactic Shock: An exaggerated allergic reaction manifested by bronchospasm and vascular collapse.

V. CONTROLLING MEASURES AND PERSONNEL SAFETY

A. STINGING INCIDENTS:

1. Prior to responding into the area of an attack, all personnel involved shall don full protective clothing including turnout pants, turnout coat, helmet, firefighting gloves, and bee veil. Pant cuffs, coat sleeves, collar, and coat waist shall be secured against the body with duct tape to prevent the bees from entering the turnouts. (Figure A)

Note: Survival of the victim depends on a rapid and aggressive attack on the bees. It is important for rescue personnel to be fully dressed in their PPE and ready to effect a rescue operation immediately after arriving on scene.

2. All personnel not immediately involved with the rescue should seek shelter in an enclosed vehicle or structure.
3. Place a 1" hose line with a spray nozzle into service. The nozzle should be adjusted to a wide-angle fog pattern and directed to drive the insects away from the victim(s). The fog spray should be applied in a circular motion covering the ground and 30 feet of air space around the victim(s). If possible, a second 1" hose line should be placed into service to further protect rescuers and the victim(s). Cover the victim(s) with a blanket for additional protection and continue fog spray until rescue personnel and the victim(s) are in a safe refuge area.

The above procedure should be used for apparatus without Class A foam capability. **"Water only"** will only temporarily drive the bees away. They may become more agitated and continue to attack. Request an additional resource with Class A foam capability be assigned to the incident.

For apparatus with Class A foam capability, a 1% solution of Class A foam sprayed upon the AHB is sufficient to immediately immobilize the bees and kill them within minutes. Foam agents establish a physical and odor barrier against the bees, neutralizing the alarm pheromone produced by AHB stings. Foam also blocks the breathing tubes of the bees, causing suffocation and death.

4. Establish an exclusionary zone of 300' minimum around the swarm. Bystanders should be directed to remain inside structures, vehicles, or areas clear of the exclusionary zone.
5. Provide medical aid to any bee sting victim(s), including:
 - a. Perform primary patient survey.
 - b. Ensure adequate airway and administer high flow oxygen.
 - c. Remove stingers as soon as possible, to prevent further injury.
 - d. Perform secondary patient survey.
 - e. Treat for anaphylactic shock if necessary.
 - f. Remove patient's outer layer of clothing to assist in dislodging stingers and trapped bees prior to loading patient into transport vehicle.
 - g. Apply cold packs to affected areas.
 - h. Place patient in the position of comfort, minimizing the patient's activity. Continue to monitor patient's condition and transport.

B. ACTIVE SWARM – NO ATTACK

1. Prior to responding into the area of a reported swarm, all personnel involved shall don full protective clothing including turnout pants, turnout coat, helmet, firefighting gloves, and bee veil. Pant cuffs, coat sleeves, collar, and coat waist shall be secured against the body with duct tape to prevent the bees from entering the turnouts. (Figure A)
2. If an active swarm is found, an exclusionary zone shall be established 300 feet around the swarm. Bystanders should be directed to remain inside structures, vehicles, or areas clear of the exclusionary zone.
3. If an active swarm is found, and the Incident Commander determines that an immediate, or future possibility for injury to humans or animals exists, the bees are to be eradicated using a 1" spray nozzle with a 1% solution of Class A foam.
4. The dead insects shall be recovered and disposed of by placing them in a rubbish container secure from access to children, animals, and birds.

C. INACTIVE SWARM OR COLONY – NO ATTACK:

1. Prior to entering into the area of a reported colony (hive), all personnel involved shall don full protective clothing including turnout pants, turnout coat, helmet, firefighting gloves, and bee veil. Pant cuffs, coat sleeves, collar, and coat waist shall be secured against the body with duct tape to prevent the bees from entering the turnouts. (Figure A)
2. If a colony (hive) is found, an exclusionary zone shall be established 300 feet around the colony.
2. If a colony (hive) is found, and the Incident Commander determines that an immediate, or future possibility for injury to humans or animals exists, the bees are to be eradicated using a 1" spray nozzle with a 1% solution of Class A foam.

Note: If a colony of bees is located inside a structure, such as in a wall, attic, or crawl space, the Incident Commander shall advise the property owner to select and request a pest control operator (listed in the yellow pages) to eradicate the bees. Fire Department personnel shall not attempt to remove bees located inside a structure.

4. The dead insects shall be recovered and disposed of by placing them in a rubbish container secure from access to children, animal, and birds.

VI. SURPRISE ATTACKS

1. When personnel encounter flying, stinging insects, without a protective hose line, or a safe refuge area, they should retreat rapidly from the area.
2. Do not run away in a straight line.
3. Do protect your eyes, nose, and mouth, as the bees tend to attack and sting these areas of the body.
4. Do not try to reach a structure, vehicle or other enclosed area to escape the bees.
5. Do not stay in one location trying to remove / fend off the bees with your hands. Staying in one area can prove fatal. You will quickly be overcome with bee stings.
6. Do not jump into a body of water, this will only temporarily deter the bees. The bees will remain a threat since the AHB is persistent and will wait for you to come up for air.

VII. WILDLAND ENCOUNTERS

1. When personnel encounter active bees in wildland areas without a protective hose line, safe refuge area, or full protective clothing; they shall don the bee veil and retreat rapidly from the area.
2. Wildland protective clothing must be properly worn with all openings wrapped securely against the body. This will prevent entry of flying, stinging insects.
3. In fire conditions, heavy smoke has been known to disorient the bees, which can assist potential victims in escaping to a safe refuge area.
4. Only personnel wearing full wildland protective clothing and bee veils should perform rescue procedures in a wildland setting. Victims should be removed to a safe refuge area and treated.

VIII. BEE VEIL (HOOD)

To provide additional personal protection for Department members during encounters with flying, stinging insects, all emergency first responder apparatus have been equipped with an AHB kit. Each kit contains a plasticized sheet of procedural instructions, a roll of duck tape, and bee veils. The bee veil should be donned according to the following sequence:

- Veil must be worn over the firefighting helmet.
- Place veil over helmet with the widest section of the veil to the front. Place drawstrings to the rear.
- Bring strings to the front (under each arm) and thread the ends of the strings through the plastic ring on the front of the veil. (Thread strings through the ring from opposite directions.)
- Pull strings through the ring and tie tightly to secure a bee-tight closure against the body.

**Training Alert 15 - Bee Swarms
Number 15 March 31, 2000**

LAFD Companies have responded to at least 3 bee swarm incidents in the past 2 days. With warmer weather and springtime conditions approaching it is anticipated that more of these incidents will occur. The In-Service Training Section has revised Training Bulletin #83 and the instruction sheet that is included in the bee kit. These revisions are the result of the Fire Department being designated as the primary responding agency for the handling of bee incidents. LAFD companies have handled the recent bee swarm incidents with ease by following proper procedures as outlined in the Training Bulletin and bee kit instruction sheet. Because of the recent increase in swarming incidents, the revised Training Bulletin and instruction sheet is attached with this document. All members are encouraged to review these documents, note the changes in procedures and replace the earlier instruction sheet with this current one. The revised Training Bulletin and a plastisized instruction sheet will also be distributed through normal channels.

Safety Bulletin #4 - Heat Exhaustion

October 9, 1980 APS #4

HEAT EXHAUSTION

LESSON PLAN

OBJECTIVES:

1. To understand the physical principles and climatic factors contributing to heat and stress.
2. To understand the physiological conditions that create heat exhaustion.
3. To recognize the symptoms that create heat exhaustion.
4. To learn what you can do to prevent heat exhaustion and the treatment of yourself and others experiencing heat exhaustion.

REFERENCES: "Prevention of Heat Casualties in Marine Corps' Recruits," Military Medicine, 1961,
"Index for Evaluating Heat Stress in Terms of Resulting. Physiological Strains," BELDING & HATCH
"Control of Heat Casualties at Military Training Centers," Industrial Health, 1957
"Alterations in Red Cell Volume Following Exercise and Dehydration," Journal of Applied Physiology, 1974
Dr. R. JAMES BARNARD, UCLA, Research Cardiologist Professor REISCHL, University of California, Irvine

INTRODUCTION: December 7, 1978 at 1300 hours, Engine Company 37 is dispatched to a large brush fire in Mandeville Canyon. On arrival they find thirty acres of dense brush well involved with 50 mph Santa Ana winds and a BBI of 46. Temperature is 40 degrees Celsius (105 degrees F.). At 1400 hours three members of the company become sick and appear unable to continue firefighting duties.

1. Can you define the problem that exists here?
2. What physiological occurrence is taking place?
3. What actions would you take if this were you?

PRESENTATION: Physiological and Environmental Conditions:

As firefighters we are often subjected to physically hostile environments. These unhealthy and dangerous surroundings are many and varied but this discussion will cover how our body may react to the three most familiar forms of heat stress generally referred to as heat stroke, heat cramps and HEAT EXHAUSTION.

Heat stroke is the most serious of the three and it occurs when the body temperature reaches a level where the regulatory function fails and sweating

stops. The body temperature can then rise to critical levels. Tissue damage and death is possible. Relief is possible only by emergency measures that quickly reduce body temperature in order to avoid irreparable damage to the brain.

Heat cramps are painful muscle spasms in the extremities, back and abdomen. This condition is due, at least in part to excessive loss of salt during sweating. Heat exhaustion can occur in individuals working in high temperature environments and is brought about by a number of interrelated factors. Heat exhaustion occurs basically because of excessive water loss leading to a circulatory failure when the amount of blood returning to the heart and lungs for reoxygenation is significantly reduced. Fainting may result but unless the individual has another illness such as heart disease the individual will usually recover promptly if removed to a cool place and permitted to lie down for a time.

Through various physiological controls (the primary one being the hypothalamus in the brain) our body maintains a constant deep body temperature within quite narrow limits between 97° and 100° in spite of both internal and external influences. As firefighters we are frequently thrust into an environment over which we have very limited control.

For example, the air temperature, humidity, and the wind, combined with the heat radiated from a fire all play a part in our body's physiological reactions. The protective clothing we wear shields us to some degree from heat radiation, but unfortunately, it also prevents internally generated heat from escaping. In situations where we are exposed to prolonged heat or extreme working conditions, (e.g., major structure or brush fires) we should expect certain amounts of heat stress and anticipate how our bodies will react to this stress. (See Diagram "A") When we work at a fire, our bodies which are essentially heat generating machines; produce vast amounts of heat. For example, when our muscles are at rest they produce as little as 25 percent of the total body heat but when they contract as in running, weight lifting, or hard physical firefighting, the production of heat may be multiplied hundreds of times. This heat, as it is produced is brought to the surface by the blood stream and it escapes to cooler surroundings primarily by conduction and convection. Sweating may occur even when the air temperature is below the skin temperature; however, when the temperature of the surrounding air becomes equal to or rises above that of the body, sweating, occurs and heat is lost by vaporization of moisture. A basic example of heat loss through vaporization can readily be seen by rubbing a small amount of alcohol on your forearm. It will evaporate rapidly and as it changed from a liquid to a vapor, it uses heat from the skin which gives a distinct cold feeling to your arm.

SYMPTOMS OF HEAT EXHAUSTION:

Heat exhaustion is a condition caused by excessive water loss and its symptoms include:

Profuse sweating

Pale and clammy skin

Fatigue and general weakness

Vomiting

Muscle cramps

Nausea and possible fainting

Surprisingly, in heat exhaustion. (unlike heat stroke)

body temperatures remain fairly normal.

PREVENTION: What are some of the primary precautions or actions we can take to minimize our, potential for heat exhaustion?

- a. Do not overeat anytime but especially when on duty and fire danger ratings indicate high fire danger. Overeating adds to heat generation in our bodies.
- b. Stay in shape and keep your weight down. Being physically fit is undoubtedly the best defense against heat stress. (See Fig. 1)
- c. Eat foods such as oranges, etc., which are high in potassium.

Figure 1 illustrates the importance of the physical conditioning required to effectively combat or reduce exhaustion. Military Medicine Magazine 1961: As you can see, the recruits showed a significant decrease in heat stress as their training progressed and they got in better shape. Also important to notice is that during their two weeks at the rifle range (weeks 8 and 6) where they had minimal physical exercises, they de-conditioned with a resulting increase in heat exhaustion cases immediately thereafter in week 7. The Department physical fitness program, if done in an aggressive and conscientious manner will reduce the potential for heat stress.

TREATMENT:

What can you do when you feel the symptoms of heat exhaustion approaching?

1. Drink plenty of water - all you can take.
2. Slow down vigorous physical activity.
3. Get to a cool/shaded environment.
4. Loosen clothing to improve convection and evaporation.
5. Apply cool wet cloths to head and body.
6. Lie down and elevate feet approximately 12 inches above level of head.

When involved in prolonged firefighting operations such as a brush fire and the outside temperature is very high, we frequently perspire so much that dehydration takes place resulting in the potential for heat cramps, heat exhaustion or heat stroke. The body's heat-regulating devices are efficient but there is a limit to what they can accomplish. Remember - as firefighters, we work at one of the most physically demanding job in the world. The best insurance we can provide for ourselves and our families is to **STAY IN TOP PHYSICAL CONDITION.**

APPLICATION:

Review the conditions that will prevent or reduce heat exhaustion and the conditions which contribute to heat exhaustion. Ask questions. Encourage review of the First Aid Manual on Heat Exhaustion.

When a firefighter's body produces more heat than it can get rid of through radiation or convection, this is what can happen

Greater heat loss by Radiation and convection

Skin Temperature rises

Heat Loss by evaporation

Increase of heat loss from core of body as skin temperature rises

Skin Circulation and temperature rises

Unevaporated sweat useless for cooling

Sweating Salt intake NAUSEA

Blood flow to heart decreases **Prickly heat**

Fatigue of **Sweat glands**

Drain on body salt **HEAT CRAMPS**

Blood flow to vital body areas

decreases causing:

Inadequate skin circulation

Decreased **Sweating**

DRAIN ON BODY WATER

Increase water intake

FATIGUE AND GENERAL WEAKNESS

Body Temperature rises **Thirst**

Circulatory Shock

Sweating **Stops** or

HEAT EXHAUSTION

Rapid rise in Body temperature

resulting in:

HEAT STROKE

HEAT EXHAUSTION LESSON PLAN TEST

Read each question carefully, then select the answer which is the most correct answer to the question.

1. The best preventive measure against heat exhaustion is:

- a. Eat plenty food on warm days
- b. Stay in good physical condition
- c. Reduce liquid intake on warm days
- d. None of the above

2. The majority of body heat is lost or dissipated by

- a. exhalation
- b. dialation
- c. the skind.
- d. radiation

3. The small gland in our head that is the primarily heat regulation in our body is called the

- a. hypothalamus
- b. pituitary
- c. pineal body
- e. thyroid

4. Of the four factors below, which is NOT a recommended action to take for a firefighter suffering from heat exhaustion?

- a. Remove and/or loosen clothing
- b. Elevate head 12 inches
- c. Drink plenty of water
- d. Keep in shade

5. Normal body temperatures for most firefighters is in the range of:

- a. 94 - 97 degrees
- b. 95 - 100 degrees
- c. 96 - 98 degrees
- d. 97 - 100 degrees

6. When we perspire, the cooling effect derived from the sweat is primarily the result of:

- a. dehydration
- b. radiation
- c. stratification
- d. evaporation

7. What factors listed below will help firefighters minimize their potential for heat exhaustion?

- a. Keep body weight down and stay in shape
- b. Eat oranges or foods with potassium on hot days
- c. Drink plenty of water when fighting brush/grass fires on hot days
- d. All of the above

8. One of the conditions listed below, which one is NOT a symptom normally associated with heat exhaustion?

- a. Profuse sweating
- b. Diarrhea
- c. Fatigue and general weakness
- d. Nausea

9. What food listed below has a high potassium content and is recommended for eating to reduce the potential for heat exhaustion?

- a. Apples
- b. Oranges
- c. Cabbage
- d. Pears

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10. A firefighter that feels he is experiencing symptoms of heat exhaustion should
- Drink all the water he can take
 - Apply cool wet cloths to his head and body
 - Get in the shade and loosen his clothing
 - All of the above

ANSWERS:

- b 6. d
- c 7. d
- a 8. b
- b 9. b
- d 10. d

Safety Bulletin #3 - Poisonous Plants

June 22, 1981

APS #3

POISONOUS PLANTS

The most skin reactive poisonous plants found in the Southern California area are poison ivy, poison oak and poison sumac. They are from the same common group and contact with them may produce severe rash, characterized by redness, swelling and intense burning and itching. Severe reaction may also produce a high fever and illness. Previous exposure does not give immunity, but makes a person more susceptible.

Poison Ivy (Rhus Radicans)

1. Grows as a small plant, a vine and a shrub.
2. Leaves always consist of three glossy leaflets (Ill. #1).
3. Contains an extremely toxic oil (urushiol).

Poison Oak (Rhus Diversiloba)

1. A variant of poison ivy.
2. Grows as a shrub.
3. Leaves consist of three leaflets but have a softer, oaklike appearance (Ill. #2).
4. Common in low places and thickets.
5. Often conspicuous in dry season by its red foliage.

Poison Sumac (Rhus Vernix)

1. Not as virulent as poison ivy or oak.
2. Grows as a large shrub or tree from 5 to 25 ft. tall.
3. Identified by green compound leaves and almost pure white berries (Ill. #3).
4. Berries are highly toxic.

All members should be alert to avoid exposure from skin reactive plants while engaged in any type of activity or operation in the mountain areas. A person need not come into direct contact with the plants. Air, wind, smoke, dirt and water are capable of carrying the poison and may provide sufficient exposure to skin and eyes. Inhalation of smoke containing particles is especially serious.

While engaged in fire suppression activities, it may be impossible to avoid being exposed. In all other operations such as drills, brush clearance and even coldtrailing, extreme caution should be used where poisonous skin reactive plants are identified or suspected. Work areas must be surveyed prior to any planned activity in order to avoid being exposed to poisonous plants.

FIRST AID:

- A. Remove contaminated clothing, wash all exposed areas thoroughly with soap and water, followed by rubbing alcohol.

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B. Apply calamine or other soothing skin lotion if the rash is mild.

C. Seek medical advice if a severe reaction occurs, or if there is a known history of previous sensitivity.

**Training Alert #2 - Update on Africanized Honeybees
Number 2 December 1998**

The In-Service Training Section will issue Training Alerts as the need arises. They are intended to be shared at line-up.

AFRICANIZED HONEYBEE UPDATE

The northward migration of the Africanized Honey Bee into the United States began in Texas in 1990. The AHB (Africanized Honey Bee) can spread at a rate of 200 – 300 miles annually. By 1993, AHB colonies were found in southwestern New Mexico, and Southern Arizona. In the fall of 1994 Africanized Honey Bees were detected in Riverside County, California. Today the AHB infestation in California includes all of Imperial, Riverside, and San Bernardino Counties and the majority of San Diego County. On December 15, 1998 two established colonies of AHB were found in Los Angeles County. One in Lawndale, in a property line wall, and another in San Bernardino, in a bee box. The probability of the AHB moving into the Los Angeles area within the next year is high.

Field identification of the Africanized Honey Bee is difficult as the AHB looks very similar to the European Honey Bee in size, color and overall appearance. The difference lies in the AHB behavioral traits. The AHB is extremely aggressive with a great tenacity to protect its hive. These bees have the ability to detect the vibrations of man / animal walking up to 150 feet away and will send out large numbers of bees to investigate / attack the disturbance. Once the first sting occurs, an "attack pheromone" is released by the bee which fills the air and signals to the hive that an attack has begun. Several hundred bees will join forces to repel the invader with an average defensive action of 85 stings per 30 seconds. Unlike the European Honey Bee which will drive a man or animal as far as 400 yards before ceasing an attack, the AHB will chase an intruder more than a half mile with the defensive action lasting 8 hours or more.

To date there have been one hundred eleven significant African Honey Bee finds, and twenty multiple stinging incidents in California.

Africanized Honey Bee Awareness

1. Do not molest honeybee nests. Any disturbance can or will trigger an attack.
2. AHB hives are sensitive to local noise or strong vibrations. Tools, machinery, vehicles, sirens, bright white lights (headlamps, flashlights) can be a factor.
3. If bees are swarming, evacuate the area and seek enclosed cover.

Protection from Africanized Honey Bee - If Pursued

1. Do not run in a fast zig-zag pattern away from the direction of the attacking bees. Bees generally fly in a straight line, and have difficulty making quick turns.
2. Do cover your face. Stings received about the mouth and eyes can be more serious than on other **parts** of your body.
3. Do not stay in one spot trying to remove the bees with your hands. Staying in one area can prove fatal. You will quickly be overcome with bee stings.
4. Do try to reach a building or some other enclosed area to escape the bees.

5. Jumping into a body of water will only temporarily deter the bees. They will still be a threat since an AHB is persistent and will wait for you to come up for air.

Emergency Telephone Numbers - AHB

1. HONEY BEE SWARMS / NESTS (Outside / Not on a Structure)
Vector Control Districts - Call: 1-800-925-3800
2. HONEY BEE SWARMS / NESTS (Inside / or On a Structure)
AHB HOTLINE - Call: 1-800-BEE-WARY
3. MEDICAL INFORMATION
LA Regional Drug & Poison Center - Call: 1-800-876-4766